



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/463,423	04/07/2000	GING HAUW KHOE	GRIHACP28AU	6300

7590

02/04/2003

DAVIS & BUJOLD
500 NORTH COMMERCIAL STREET
FOURTH FLOOR
MANCHESTER, NH 03101

EXAMINER

CHORBAJI, MONZER R

ART UNIT

PAPER NUMBER

1744

14

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/463,423

Applicant(s)

KHOE ET AL.

Examiner

MONZER R CHORBAJI

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 14 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

This non-final office action is in response to the amendment received on 11/14/2002

Terminal Disclaimer

1. The patent (5,688,378), which forms the basis for the double patenting rejection, is not identified in the Terminal Disclaimer filed 10/29/2002. A new Terminal Disclaimer referring to both 09/463,423 and 5,688,378 is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 10-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Khoe (WO 95/11195).

With respect to claim 10, Khoe discloses a method for oxidizing an organic species (iron, page 6, lines 7-27) including the following steps: supplying an oxidizable source of sulfur (page 6, line 22) and oxygen (page 6, lines 31-32) to the solution and irradiating the solution with UV light (page 6, lines 18-19).

With respect to claim 11, Khoe teaches that since the source of sulfur is in an aqueous solution, then it is inherent that sulfur will be in various ionic forms (page 6, lines 10-11).

With respect to claim 12-13, Khoe teaches that inorganic species such as arsenic or iron are in trace quantities (page 16, lines 2-5) of drinking water.

With respect to claim 14, Khoe discloses that the wavelength of UV light is less than 300nm (page 8, lines 11-12).

With respect to claims 15-16, Khoe teaches that dissolved oxygen is derived from air (page 20, lines 28-30) and dissolved oxygen is derived from a gas source with an oxygen partial pressure of about 0.2 atmospheres (page 21, lines 1-4).

With regard to claim 17, Khoe discloses the aqueous solution is industrial waste water (page 3, lines 18-26).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khoe (WO 95/11195) in view of Frame et al (U.S.P.N. 5,238,581).

The teachings of Khoe with respect to claims 10-17 have previously been set forth. However, with respect to claim 18, Khoe fails only to teach of supplying an oxidizable source of sulfur to other than iron. With regard to claim 18, Frame teaches that is known to supply an oxidizable source of sulfur (col.2, line 11 and lines 24-27) and air (col.2, line 12) in order to oxidize cyanide. In addition, Frame discloses the step of irradiating the solution with UV light (col.3, lines 49-53). It would have been obvious to one having ordinary skill in the art to modify Khoe's method to include inorganic water-soluble cyanide since it is in a comparably dangerous class because of the generally low tolerance of life forms to cyanide (Frame, col.1, lines 34-37).

With regard to claims 19-25, such limitations were addressed above in claims 11-17.

Response to Arguments

8. Applicant's arguments with respect to claims 10-17 have been considered but are moot in view of the new ground(s) of rejection.

The Frame reference was applied to show that it is known to oxidize cyanide (i.e., other than iron) by supplying an oxidizable source of sulfur, oxygen and UV light.

On page 3 of the response, applicant argues, "WO 95/11195 (Khoe) does not disclose, teach or suggest in any manner sulfur as an oxidizing source or photoabsorber. In fact, WO 95/11195 very clearly discloses and teaches that the photoabsorber is a dissolved cationic metal species such as Fe (II) or Fe (III), Cu₂, etc."

Khoe does disclose (page 6, line 22) an oxidizable (or photoabsorber) source of sulfur as S (IV) since this component results in combination with oxygen and UV light (page 6, lines 22-24) in the oxidation of Fe (II) to Fe (III). Furthermore, Khoe teaches throughout the specification that the function of photoabsorber is to increase the rate of oxidation (page 2, lines 31-34 and page 3, lines 5-10) upon exposure to UV light. This property is exactly as S (IV) functions. As a result, S (IV) is an oxidizable source of sulfur for oxidizing iron as disclosed in Khoe.

Conclusion

9. The prior art made of record but not relied upon is considered pertinent to applicant's disclosure. Frame et al (U.S.P.N. 5,120,453) teaches that it is known to oxidize cyanide by supplying an oxidizable source of sulfur and air and recognizes the importance of irradiating the solution. Also, Borbely et al (U.S.P.N. 4,537,686) teaches of oxidizing cyanide by supplying an oxidizable source of sulfur and air.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (703) 305-3605. The examiner can normally be reached on M-F 8:30-5:00.

Art Unit: 1744

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (703) 308-2920. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-7719 for After Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Monzer R. Chorbaji *MRC*
Patent Examiner
AU 1744
January 27, 2003

Robert J. Warden, Sr.
ROBERT J. WARDEN, SR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700